Important History and Background

I. **Jetco Chemicals Inc.** (A Procter & Gamble Co.)

- Original application submitted Nov. 2, 1973 (before UIC program).
- Permit issued (**WDW-117**) on February 14, 1974.
- Well drilled and put into service on July 11, 1974.
- In 1993, during the (4th) technical review for renewal, it was noted that injection was occurring into a USDW (No.3 sand, depth 2,790 to 2,860 feet).
- Case sent to Enforcement in January 1994.
- Well plugged and abandoned on May 9, 1994.
- Injection operations spanned 20 years (1974-1994).
  368,266,005 gallons (average rate of 35 gpm) of waste injected.
  current plume radius 914 feet (Cook-Joyce Consultants).
- Facility and operations never ceased, wastewater sent to Corsicana's POTW.

II **Corsicana Technologies Inc.**

- Acquired facility from US Bankruptcy Court (1997).
- July 20, 2001, submitted injection well permit application (**WDW-394**) and request for Aquifer Exemption (Woodbine Formation, 3,600 ft. radius from well) .
- September 26, 2001, NOAC
- May 8, 2002, 1st NOD, response dated June 10, 2002.
- May 14, 2002, Public Meeting in Corsicana for Justice Tom Gray (protestant-adjacent landowner), presently resides in Crawford.
- July 16, 2002, 2nd NOD, response dated August 16, 2002.
- October 24, 2002, submitted groundwater sampling results.
- **Applicant <u>could not demonstrate</u> that requirements for Aquifer Exemption (30 TAC §331.13) were met.**
- April 14, 2003, submitted "Injection Interval Modification."
  Restricted injection only into No. 4 sand, which is below USDW.
  Lowered injection volume rate from 150 to 50 gpm.
  Removed request for aquifer exemption.
  Consider permit issuance under 30 TAC §331.121(c)(4)(D).

III **Support for Draft Permit**

- 30 TAC §331.121(c)(4)(D) can be agreed to with the following considerations.
  * Reduced operating parameters of Jetco's permit.
    Injection pressure from 750 to 450/300 psig.
    Injection volume from 150 to 50 gpm.
  * Exclusive permit conditions.
    Take water samples from each of the Woodbine sands.
    Core the entire shale confining zone (approx. 70 ft.).
    Core the entire injection sand (approx. 50 ft.).
    Move the well location approx. 1,500 feet southwest to ensure that it is "outside" Jetco's waste plume (914 feet).
- **Applicant has provided documentation from the drilling and completion of WDW-394 that the injection sand is below the base of the USDW and the confining zone is free of transecting, transmissive faults and fractures [30 TAC §331.121(c)(3)(B)].**

NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN UNDERGROUND INJECTION CONTROL PERMIT

PROPOSED PERMIT NO. WDW-394

APPLICATION. Corsicana Technologies, Inc., P.O. Box 1898, Corsicana, Texas 75151 a surfactants manufacturing facility has applied to the Texas Natural Resource Conservation Commission (TNRCC) for a Class I permit to authorize the disposal of ammonia wastewaters with salts, polysulfides, sodium chloride, amines, and alcohols. The facility is located on the south side of Texas Highway 31 East, approximately 3/4 of a mile east of Interstate 45 within the city of Corsicana boundaries in Navarro County, Texas. This application was submitted to the TNRCC on July 20, 2001. The permit application is available for viewing and copying at Corsicana Public Library, 100 North 12th Street, Corsicana, Texas 75110.

The TNRCC executive director has determined the application is administratively complete and will conduct a technical review of the application. After completion of the technical review, the TNRCC will issue a Notice of Application and Preliminary Decision.

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. The TNRCC will hold a public meeting if the executive director determines that there is a significant degree of public interest in the application, or if requested by a local legislator. A public meeting is not a contested case hearing.

Written public comments and requests for a public meeting must be submitted to the Office of the Chief Clerk, MC 105, TNRCC, P.O. Box 13087, Austin, TX 78711-3087.

ADDITIONAL NOTICE. After technical review of the application is completed, the executive director may prepare a draft permit and will issue a preliminary decision on the application. **Notice of the Application and Preliminary Decision will be published and mailed to those who are on the county-wide mailing list or the mailing list for this application. That notice will contain the final deadline for submitting public comments.**

OPPORTUNITY FOR A CONTESTED CASE HEARING. After the deadline for public comments, the executive director will consider the comments and prepare a response to all relevant and material, or significant public comments. **The response to comments, along with the executive director's decision on the application, will be mailed to everyone who submitted public comments or who requested to be on the mailing list for this application. If comments are received, the mailing will also**

provide instructions for requesting reconsideration of the executive director's decision and for requesting a contested case hearing. A contested case hearing is a legal proceeding similar to a civil trial in state district court.

A contested case hearing will only be granted based on disputed issues of fact that are relevant and material to the Commission's decision on the application. Further, the Commission will only grant a hearing on issues that were raised during the public comment period and not withdrawn.

MAILING LIST. In addition to submitting public comments, you may ask to be placed on a mailing list to receive future public notices mailed by the Office of the Chief Clerk. You may request to be added to: (1) the mailing list for this specific application; (2) the permanent mailing list for a specific applicant name and permit number; and/or (3) the permanent mailing list for a specific county. Clearly specify which mailing list(s) to which you wish to be added and send your request to the TNRCC Office of the Chief Clerk at the address below. Unless you otherwise specify, you will be included only on the mailing list for this specific application.

INFORMATION. If you need more information about this permit application or the permitting process, please call the TNRCC Office of Public Assistance, Toll Free, at 1-800-687-4040. General information about the TNRCC can be found at our web site at www.tnrcc.state.tx.us.

Further information may also be obtained from Corsicana Technologies, Inc. at the address stated above or by calling Mr. Doug Granger at (512) 474-9097.

Issued: September 26, 2001

I. Permittee

Corsicana Technologies, Inc.
East Highway 31
Corsicana, Texas 75151
(903) 874-9500

II. Type of Permit

Initial_X_ Renewal_____ Amended_____
Commercial_____ Noncommercial_X_
Hazardous_____ Nonhazardous_X_
Onsite_X_ Offsite_____
Authorizing Disposal of Waste from Captured Facility_____
Authorizing Disposal of Waste from Off-site Facilities Owned by Owner/Operator_____

III. Nature of Business

CONTINUED on Pages 2 through 7

The permittee is authorized to conduct injection in accordance with limitations, requirements, and other conditions set forth herein. This permit is granted subject to the rules and orders of the Commission, and the laws of the State of Texas. The permit will be in effect for ten years from the date of approval or until amended or revoked by the Commission. If this permit is appealed and the permittee does not commence any action authorized by this permit during judicial review, the term will not begin until judicial review is concluded.

Organic chemical (Amine) production plant for the manufacture of commercial cleaners and scale/corrosion inhibitors.

IV. General Description and Location of Injection Activity

The disposal well is to be used to dispose of nonhazardous wastes generated by the permittee's facility during the manufacture of commercial cleaners and scale/corrosion inhibitors. The well will be located approximately 80 feet from the south line and approximately 2,565 feet from the east line of the John Peoples Survey, A-9, Latitude 32° 05' 42" North, Longitude 96° 25' 31" West, Navarro County, Texas. The injection zone is within the Woodbine Formation at the approximate subsurface depths of 2,869 to 3,100 feet. The authorized injection interval is within the Woodbine Formation at the approximate subsurface depths of 2,869 to 3,000 feet.

V. Drilling and Completion Requirements

A. The drilling and completion of the well shall be done in accordance with 30 TAC §331.62, the plans and specifications of the permit application, and the following conditions.

B. The permittee shall set and cement surface casing to a minimum subsurface depth of 2,800 feet, and long string casing into or through the injection zone in order to properly protect each underground source of drinking water (USDW) or freshwater aquifer.

C. Surface casing shall be tested to 1,000 psig for 30 minutes, and long string casing shall be tested to 1,500 psig for 30 minutes.

D. To protect the ground surface from spills and releases, the base of the wellhead shall be enclosed by a diked, impermeable pad or sump. Any liquid collected shall be disposed of in an appropriate manner.

E. Mechanical integrity shall be demonstrated prior to authorization by the Executive Director to conduct injection operations.

F. Any changes to the plans and specifications in the original application shall be approved in writing by the Executive Director that said changes provide protection standards equivalent to or greater than the original design criteria.

G. Special requirements:

1. Conventional core will be taken of the entire confining zone. Inspection and laboratory analysis will determine that the confining zone is free of transecting, transmissive faults and fractures.

2. Conventional core will be taken of the entire injection Woodbine sand. Inspection and laboratory analysis will determine that the injection sand has sufficient porosity and permeability to receive permitted waste.

3. Fluid samples will be taken in each of the four (4) main Woodbine sands. Laboratory analysis will measure the total dissolved solids (TDS) and screen for the major components of the Jetco wastestream if it exist in any of the four major individual Woodbine sands.

4. A step rate test will be performed on the injection Woodbine sand. Testing will confirm that permitted operating injection pressure (425 psig) and injection volume rate (150 gpm) are safe and will not create faults/fractures in the confining zone.

VI. Character of the Waste Streams

A. Industrial nonhazardous waste authorized to be injected by this permit shall consist solely of the following waste streams:

1. Wastes generated during closure of the well and associated facilities that are compatible with permitted wastes, injection zone and the well;

2. Treated waste water containing dissolved ammonia, polysulfides and salts;

3 Treated waste water containing dissolved sodium chloride and small amounts of organic quats and isopropanol; and

4. Other associated wastes such as groundwater and rainfall contaminated by the above authorized wastes; spills of the above authorized wastes; wash waters and solutions used in cleaning and servicing the waste disposal well system equipment; and the liquid fraction of drilling fluid used to drill a waste disposal well; which are compatible with the permitted waste streams, injection zone and well materials.

B. The injection of wastes is limited to those wastes authorized in Provision VI.A. above, into the Woodbine Formation within the injection zone between 2,869 to 3,100 feet.

C. The pH of injected waste streams shall be greater than 7 and less than 11.5.

D. Except when authorized by the Executive Director, the specific gravity of injected fluids shall not exceed 1.15 as measured at 68°F.

VII. Waste Streams Prohibited From Injection

Unless authorized by Provision VI.A., the following waste streams are prohibited. The permittee is also required to comply with all other laws or regulations which are applicable to the activities authorized by this permit.

A. Hazardous wastes as defined under 40 CFR §261.3(a) through (d), issued pursuant to the Resource Conservation and Recovery Act and the Hazardous and Solid Waste Amendments, which are regulated by the Commission as authorized by the EPA, including but not limited to any listed hazardous waste or a waste derived from the treatment, storage

or disposal of a listed hazardous waste;

B. Any by-product material as defined by Texas Health & Safety Code §401.003(3);

C. Any low-level radioactive waste as defined by Texas Health & Safety Code §401.004;

D. Any naturally occurring radioactive material (NORM) waste as defined by Texas Health & Safety Code §401.003(26); and

E. Any oil and gas NORM waste as defined by Texas Health & Safety Code §401.003(27).

VIII. Operating Parameters

A. The well shall be operated in compliance with the requirements of 30 TAC Chapters305, 331, and 335; the plans and specifications of the permit application; and the following conditions.

B. Surface injection pressure shall not cause pressure in the injection zone to:

1. initiate any new fractures or propagate existing fractures in the injection zone;

2. initiate new fractures or propagate existing fractures in the confining zone; or

3. cause movement of fluid out of the injection zone that may contaminate USDWs, and fresh or surface water.

C. The operating surface injection pressure shall not exceed 450 psig when the specific gravity of the wastestream is less than 1.05, or shall not exceed 300 psig when the specific gravity is between 1.05 to 1.15.

D. The average injection rate shall not exceed 50 gallons per minute (gpm).

E. The maximum injection rate shall not exceed 150 gpm for 7 days during storm events.

F. The volume of waste water injected shall not exceed 26,280,000 gallons per year.

G. A positive pressure of at least 100 psig over tubing injection pressures shall be maintained in the tubing-casing annulus for the purpose of leak detection. Temporary deviations from this requirement which are a part of normal well operations are authorized but may not exceed 15 minutes in duration. For 15 minutes after the pressure differential drops below 100 psig, the permittee shall conduct troubleshooting and proceed to restore a minimum 100-psig pressure differential. If a minimum 100-psig pressure differential cannot be achieved within 15 minutes, the permittee shall notify the TCEQ and commence shut-in procedures on the well. The permittee may continue to operate the well under flow conditions that maintain a minimum 100-psig pressure differential.

H. The permittee shall notify the Executive Director at least 24 hours prior to commencing any workover which involves taking the injection well out of service. Approval by the Executive Director shall be obtained before the permittee may begin work. Notification shall be in writing and shall include plans for the proposed work. The Executive Director may grant an exception to the prior written notification and approval when immediate action is required to prevent pollution according to 30 TAC §331.5. Completion of the well outside the approved injection interval, by perforation of casing, setting of screen, or establishment of open hole section, requires that the permitted injection interval be changed according to 30 TAC §331.62(3)(B) to include the depths of all well completion. Pressure control equipment shall be installed and maintained during workovers which involve the removal of tubing.

IX. Monitoring and Testing Requirements

A. Monitoring and testing shall be in compliance with the requirements of 30 TAC §305.125, §331.64, the plans and specifications of the permit application, and the following conditions.

B. The integrity of the long string casing, injection tubing, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover. The integrity of the cement within the injection zone shall be tested by means of an approved radioactive tracer survey annually. A radioactive tracer survey may be required after workovers that have the potential to damage the cement within the injection zone.

C. The pressure buildup in the injection zone shall be monitored annually, including at a minimum, a shutdown of the well for a sufficient time to conduct a valid observation of the pressure fall-off curve.

D. A temperature log, noise log, oxygen activation log or other approved log is required at least once every five years to test for fluid movement along the entire borehole.

E. A casing inspection, casing evaluation, or other approved log shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the Executive Director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years. The Executive Director may require that a casing inspection log be run every five years if there is sufficient reason to believe the integrity of the long string casing of the well may be adversely affected by naturally occurring or man-made events.

F. Injection fluids shall be tested in accordance with 30 TAC §331.64(a) and the approved waste analysis plan.

G. The pH and specific gravity of the injected waste shall be monitored continuously at a minimum frequency of at least once every 24 hours and whenever the waste stream

changes.

H. Corrosion monitoring of well materials shall be conducted quarterly and in accordance with 30 TAC §331.64(f). Test materials shall be the same as those used in the wellhead, injection tubing, packer, and long string casing, and shall be continuously exposed to the waste fluids except when the well is taken out of service.

X. Record Keeping Requirements

The permittee shall keep complete and accurate records as required by 30 TAC Chapters305, 331, and 335.

XI. Financial Assurance for Well Closure

In accordance with 30 TAC Chapter 37, 30 TAC Section 305.154(a)(9), and Sections 331.142-144, the permittee shall secure and maintain financial assurance, in a form approved by the executive director, in the amount of $ 137,000 (in 2002 dollars). Adjustments to the cost estimates for plugging and abandonment in current dollars, and to financial assurance based thereon, shall be made in accordance with 30 TAC Chapter 37. Financial assurance shall be obtained at least 60 days prior to the commencement of drilling of the well.

XII. Additional Requirements

A. Acceptance of this permit by the permittee constitutes an acknowledgment and agreement that the permittee will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

B. This permit is subject to further orders and rules of the Commission. In accordance with the procedures for amendments and orders, the Commission may incorporate into permits already granted, any condition, restriction, limitation, or provision reasonably necessary for the administration and enforcement of Texas Water Code, Chapters 26 and 27, and Texas Health and Safety Code, Chapter 361.

C. This permit does not convey any property rights of any sort, nor any exclusive privilege, and does not become a vested right in the permittee.

D. The issuance of this permit does not authorize any injury to persons or property or an invasion of other property rights, or any infringement of state or local law or regulations.

E. The following rules are incorporated as terms and conditions of this permit by reference:

1. Consolidated Permits

30 TAC Chapter 305;

2. Underground Injection Control,
30 TAC Chapter 331; and

3. Industrial Solid Waste and Municipal Hazardous Waste,
30 TAC Chapter 335.

F. The express incorporation of the above rules as terms and conditions of this permit does not relieve the permittee of an obligation to comply with all other laws or regulations which are applicable to the activities authorized by this permit.

G. This permit is based on, and the permittee shall follow the plans and specifications contained in the Class I Underground Injection Control Application dated July 20, 2001 as revised on June 10, 2002, August 16, 2002, October 24, 2002, April 14, 2003, August 15, 2003, October 21, 2003 and November 25, 2003, which is hereby approved subject to the terms of this permit and any other orders of the TCEQ. These materials are incorporated into this permit by reference as if fully set out herein. Any and all revisions to these elements shall become conditions of this permit upon the date of approval by the Commission.

H. The express incorporation of the above-cited permit application as terms and conditions of this permit does not relieve the permittee of an obligation to comply with all laws or regulations which are applicable to the activities authorized by this permit.

I. All pre-injection units servicing this well must be authorized by permit or registered in accordance with 30 TAC §331.17.